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Serial No.: 09/833,780

Filing Date: April 12, 2001

Attorney Docket No. 100.168US01

Title: AUTOMATIC PERMANENT VIRTUAL CIRCUIT CONNECTION ACTIVATION FOR CONNECTION ORIENTED NETWORKS

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of claims:**

1. (Currently Amended) A method of automatic permanent virtual circuit connection activation, the method comprising:
  - detecting initiation of communication between a first and a second network element at a first reference point;
  - receiving at least one virtual circuit identifier of the first network element;
  - learning at least one virtual circuit identifier of the second network element; and
  - creating a translation connection between the first and second network elements;
  - monitoring a permanent virtual circuit created by the translation connection;
  - when the at least one virtual circuit identifier of the second network element changes,
  - creating a new translation connection using the changed virtual circuit identifier of the second
  - network element; and
  - when the number of changes of virtual circuit identifiers of the second network element
  - have reached a predetermined number of changes terminating the translation connection.
2. (Original) The method of claim 1, further comprising validating the at least one virtual circuit identifier of the first network element as defined by a valid permanent virtual circuit database.
3. (Original) The method of claim 1, further comprising validating the at least one virtual circuit identifier of the second network element as defined by a valid permanent virtual circuit database.
4. (Original) The method of claim 1, wherein learning at least one virtual circuit identifier of the second network element, comprises:
  - monitoring traffic between the first and second network elements for any type of virtual

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circuit identifier transmitted from the second network element; and  
identifying the at least one virtual circuit identifier of the second network element in the traffic.

Claim 5 is cancelled.

6. (Currently Amended) The method of ~~claim 5~~claim 1, further comprising validating the changed virtual circuit identifier of the second network element as defined by a valid permanent virtual circuit database.

Claim 7 is cancelled.

8. (Currently Amended) ~~The method of claim 1, further~~ A method of automatic permanent virtual circuit connection activation, the method comprising:

detecting initiation of communication between a first and a second network element at a first reference point;

receiving at least one virtual circuit identifier of the first network element;

learning at least one virtual circuit identifier of the second network element;

creating a translation connection between the first and second network elements;

monitoring the first reference point and a second reference point, that is located on the network side of the first network element, for activity;

when no activity is detected at the first or second reference points starting a timer; and

when the timer has reached a predetermined amount of time terminating the translation connection.

9. (Original) The method of claim 1, wherein receiving at least one virtual circuit identifier of the first network element comprises receiving a message from an associated network containing the at least one virtual circuit identifier of the first network element.

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10. (Currently Amended) ~~The method of claim 1,~~ A method of automatic permanent virtual circuit connection activation, the method comprising:

detecting initiation of communication between a first and a second network element at a first reference point;

receiving at least one virtual circuit identifier of the first network element;

learning at least one virtual circuit identifier of the second network element;

creating a translation connection between the first and second network elements;

wherein learning at least one virtual circuit identifier of the second network element comprises receiving traffic from the second network element containing the at least one virtual circuit identifier of the second network element and storing the identifier.

11. (Currently Amended) A method of automatic permanent virtual circuit connection activation, the method comprising:

detecting initiation of communication between a first and a second network element at a first reference point;

learning at least one virtual circuit identifier of the first network element;

learning at least one virtual circuit identifier of the second network element; and

creating a translation connection between the first and second network elements.

monitoring a permanent virtual circuit created by the translation connection; and

when the at least one virtual circuit identifier of the second network element changes, creating a new translation connection using the changed virtual circuit identifier of the second network element; and

when the number of changes of virtual circuit identifiers of the second network element have reached a predetermined number of changes terminating the translation connection.

12. (Original) The method of claim 11, further comprising validating the at least one virtual circuit identifier of the first network element as defined by a valid permanent virtual circuit database.

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13. (Original) The method of claim 11, further comprising validating the at least one virtual circuit identifier of the second network element as defined by a valid permanent virtual circuit database.

Claim 14 is cancelled.

15. (Currently Amended) The method of ~~claim 14~~claim 11, further comprising validating the changed virtual circuit identifier of the second network element as defined by a valid permanent virtual circuit database.

Claim 16 is cancelled.

17. (Currently Amended) ~~The method of claim 11, further~~ A method of automatic permanent virtual circuit connection activation, the method comprising:

detecting initiation of communication between a first and a second network element at a first reference point;

learning at least one virtual circuit identifier of the first network element;

learning at least one virtual circuit identifier of the second network element;

creating a translation connection between the first and second network elements;

monitoring the first reference point and a second reference point, that is located on the network side of the first network element, for activity;

when no activity is detected at the first or second reference points starting a timer; and

when the timer has reached a predetermined amount of time terminating the translation connection.

18. (Original) The method of claim 11, wherein learning at least one virtual circuit identifier of the first network element comprises receiving traffic from the first network element containing the at least one virtual circuit identifier of the first network and storing the at least one virtual circuit identifier of the first network element.

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19. (Currently Amended) The method of claim 11, A method of automatic permanent virtual circuit connection activation, the method comprising:

detecting initiation of communication between a first and a second network element at a first reference point;

learning at least one virtual circuit identifier of the first network element;

learning at least one virtual circuit identifier of the second network element;

creating a translation connection between the first and second network elements; and

wherein learning at least one virtual circuit identifier of the second network element comprises receiving traffic from the second network element containing the at least one virtual circuit identifier of the second network element and storing the at least one virtual circuit identifier of the second network element.

20. (Currently Amended) A method of automatic permanent virtual circuit connection activation, the method comprising:

detecting initiation of communication between customer premises equipment and a network element at a first reference point;

receiving at least one virtual circuit identifier of the network element;

learning at least one virtual circuit identifier of the customer premises equipment; and

creating a translation connection between the customer premises equipment and the network element;

monitoring a permanent virtual circuit created by the translation connection;

when the at least one virtual circuit identifier for the customer premises equipment changes, recreating the translation connection using the changed virtual circuit identifier for the customer premises equipment; and

when the number of changes of virtual circuit identifiers of the customer premises equipment have reached a predetermined number of changes terminating the translation connection.

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21. (Original) The method of claim 20, further comprising validating the at least one virtual circuit identifier of the network element as defined by a valid permanent virtual circuit database.

22. (Original) The method of claim 20, further comprising validating the at least one virtual circuit identifier of the customer premises equipment as defined by a valid permanent virtual circuit database.

Claim 23 is cancelled.

24. (Currently Amended) The method of claim 23~~20~~, further comprising validating the changed virtual circuit identifier for the customer premises equipment as defined by a valid permanent virtual circuit database.

Claim 25 is cancelled.

26. (Original) The method of claim 20, wherein receiving at least one virtual circuit identifier of the network element comprises receiving a message from an associated network containing the at least one virtual circuit identifier of the network element.

27. (Original) The method of claim 20, wherein learning at least one virtual circuit identifier of the customer premises equipment comprises receiving traffic from the customer premises equipment containing the at least one virtual circuit identifier of the customer premises equipment and storing the at least one virtual circuit identifier of the customer premises equipment.

28. (Currently Amended) ~~The method of claim 20, further~~ A method of automatic permanent virtual circuit connection activation, the method comprising:

detecting initiation of communication between customer premises equipment and a network element at a first reference point;

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receiving at least one virtual circuit identifier of the network element;  
learning at least one virtual circuit identifier of the customer premises equipment; and  
creating a translation connection between the customer premises equipment and the  
network element;

monitoring the first reference point and a second reference point, that is located on the network side of the network element, for activity;

when no activity is detected at the first or second reference points starting a timer; and

when the timer has reached a predetermined amount of time terminating the translation connection.

29. (Currently Amended) A method of automatically configuring a permanent virtual circuit in an ATM network, the method comprising:

detecting communication initiation of an ATU-R;

receiving at least one virtual circuit identifier of an ATU-C;

learning at least one virtual circuit identifier of the ATU-R; and

creating a translation connection between the ATU-R and the ATU-C;

monitoring a permanent virtual circuit created by the translation connection; and

when the at least one virtual circuit identifier for the ATU-R changes, recreating the  
translation connection using the changed virtual circuit identifier for the ATU-R; and  
when the number of changes of at least one virtual circuit identifier of the ATU-R reaches  
a predetermined number of changes terminating the translation connection.

30. (Original) The method of claim 29, further comprising validating the at least one virtual circuit identifier of the ATU-R as defined by a valid permanent virtual circuit database.

31. (Original) The method of claim 29, wherein detecting communication initiation of an ATU-R comprises detecting communication initiation of an ATU-R at a first reference point.

Claim 32 is cancelled.

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33. (Currently Amended) The method of claim 3229, further comprising validating the changed at least one virtual circuit identifier as defined by a valid permanent virtual circuit database.

Claim 34 is cancelled.

35. (Original) The method of claim 29, wherein receiving at least one virtual circuit identifier of the ATU-C comprises receiving a message from an associated network containing the at least one virtual circuit identifier of the ATU-C.

36. (Original) The method of claim 29, wherein learning at least one virtual circuit identifier of the ATU-R comprises receiving traffic from the ATU-R containing the at least one virtual circuit identifier of the ATU-R and storing the at least one virtual circuit identifier of the ATU-R.

37. (Currently Amended) ~~The method of claim 31, further~~ A method of automatically configuring a permanent virtual circuit in an ATM network, the method comprising:

detecting communication initiation of an ATU-R;

receiving at least one virtual circuit identifier of an ATU-C;

learning at least one virtual circuit identifier of the ATU-R;

creating a translation connection between the ATU-R and the ATU-C

wherein detecting communication initiation of an ATU-R comprises detecting communication initiation of an ATU-R at a first reference point;

monitoring the first reference point and a second reference point, that is located on the network side of the ATU-C, for activity;

when no activity is detected at the first or second reference points starting a timer; and

when the timer has reached a predetermined amount of time terminating the translation connection.



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38. (Currently Amended) A communication network, comprising:
- an access network;
  - a central unit selectively coupled to the access network;
  - customer premises equipment selectively coupled to the central unit; and
  - an automatic permanent virtual circuit (PVC) connection activation function embedded within the central unit, wherein the automatic PVC is enabled when the customer premises equipment is initialized and is adapted to create a translation connection between the customer premises equipment and the central unit;
- wherein the central unit learns at least one virtual circuit identifier of the customer premises equipment by receiving traffic from the customer premises equipment containing the at least one virtual circuit identifier of the customer premises equipment and stores the at least one virtual circuit identifier of the customer premises equipment.
39. (Original) The network of claim 38, further comprising a network interface between the customer premises equipment and the central unit.
40. (Original) The network of claim 38, wherein the customer premises equipment comprises an end user device selectively coupled to a remote unit.
41. (Cancelled)
42. (Currently Amended) A method of automatic permanent virtual circuit connection activation, the method comprising:
- detecting initiation of communication at a user network interface between a first and a second network element;
  - receiving at least one virtual circuit identifier of the first network element;
  - learning at least one virtual circuit identifier of the second network element; and
  - creating a translation connection between the first and second network elements; and
- when the number of changes of virtual circuit identifiers of the second network element

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have reached a predetermined number of changes terminating the translation connection.

43. (Original) The method of claim 42, wherein learning at least one virtual circuit identifier of the second network element, comprises:

monitoring traffic between the first and second network elements for any type of virtual circuit identifier transmitted from the second network element; and

identifying the at least one virtual circuit identifier of the second network element in the traffic.

44. (Original) The method of claim 42, further comprising:

monitoring a permanent virtual circuit created by the translation connection;

when the at least one virtual circuit identifier of the second network element changes, creating a new translation connection using the virtual circuit identifier of the second network element.

Claim 45 is cancelled.

46. (Currently Amended) A method of automatic permanent virtual circuit connection activation. The method of claim 42, further comprising:

detecting initiation of communication at a user network interface between a first and a second network element;

receiving at least one virtual circuit identifier of the first network element;

learning at least one virtual circuit identifier of the second network element;

creating a translation connection between the first and second network elements;

monitoring the user network interface and a network node interface, that is located on the network side of the first network element, for activity;

when no activity is detected at the user network interface or the network node interface starting a timer; and

when the timer has reached a predetermined amount of time terminating the translation

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connection.

47. (Original) The method of claim 42, wherein receiving at least one virtual circuit identifier of the first network element comprises receiving a message from an associated network containing the at least one virtual circuit identifier of the first network element.

48. (Currently Amended) ~~The method of claim 42,~~ A method of automatic permanent virtual circuit connection activation, the method comprising:

detecting initiation of communication at a user network interface between a first and a second network element;

receiving at least one virtual circuit identifier of the first network element;

learning at least one virtual circuit identifier of the second network element; and

creating a translation connection between the first and second network elements;

wherein learning at least one virtual circuit identifier of the second network element comprises receiving traffic from the second network element containing the at least one virtual circuit identifier of the second network element and storing the identifier.

49. (Currently Amended) A method of automatic permanent virtual circuit connection activation, the method comprising:

detecting initiation of communication at a user network interface between a first and a second network element;

learning at least one virtual circuit identifier of the first network element;

learning at least one virtual circuit identifier of the second network element; and

creating a translation connection between the first and second network elements;

monitoring a permanent virtual circuit created by the translation connection; and

when the at least one virtual circuit identifier of the second network element changes,

creating a new translation connection using the changed virtual circuit identifier of the second network element; and

when the number of changes of virtual circuit identifiers of the second network element

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have reached a predetermined number of changes terminating the translation connection.

Claims 50 and 51 are cancelled.

52. (Currently Amended) A method of automatic permanent virtual circuit connection activation. The method of claim 49, further comprising:

detecting initiation of communication at a user network interface between a first and a second network element;

learning at least one virtual circuit identifier of the first network element;

learning at least one virtual circuit identifier of the second network element;

creating a translation connection between the first and second network elements;

monitoring the user network interface and a network node interface, that is located on the network side of the first network element, for activity;

when no activity is detected at the user network interface or the network node interface starting a timer; and

when the timer has reached a predetermined amount of time terminating the translation connection.

53. (Original) The method of claim 49, wherein learning at least one virtual circuit identifier of the first network element comprises receiving traffic from the first network element containing the at least one virtual circuit identifier of the first network and storing the at least one virtual circuit identifier of the first network element.

54. (Currently Amended) A method of automatic permanent virtual circuit connection activation. The method of claim 49, comprising:

detecting initiation of communication at a user network interface between a first and a second network element;

learning at least one virtual circuit identifier of the first network element;

learning at least one virtual circuit identifier of the second network element; and

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creating a translation connection between the first and second network elements;

wherein learning at least one virtual circuit identifier of the second network element comprises receiving traffic from the second network element containing the at least one virtual circuit identifier of the second network element and storing the at least one virtual circuit identifier of the second network element.